SIEMENS



Data sheet 3RW5558-6HA16

SIRIUS



SIRIUS soft starter 200-690 V 1280 A, 110-250 V AC Screw terminals

Figure similar

product brand name

product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW55
manufacturer's article number	
 of high feature HMI module usable 	3RW5980-0HF00
 of communication module PROFINET standard usable 	3RW5980-0CS00
 of communication module PROFINET high-feature usable 	3RW5950-0CH00
 of communication module PROFIBUS usable 	3RW5980-0CP00
 of communication module Modbus TCP usable 	3RW5980-0CT00
 of communication module Modbus RTU usable 	3RW5980-0CR00
 of communication module Ethernet/IP 	3RW5980-0CE00
 of circuit breaker usable at 400 V 	3VA2716-7AB05-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V 	3VA2716-7AB05-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of the gG fuse usable up to 690 V 	3x3NA3365-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NB3357-1KK26: Type of coordination 2. Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3x3NE3340-8; Type of coordination 2, Iq = 65 kA
General technical data	
starting voltage [%]	20 100 %
stopping voltage [%]	50 %; non-adjustable
start-up ramp time of soft starter	0 360 s
ramp-down time of soft starter	0 360 s
start torque [%]	10 100 %
stopping torque [%]	10 100 %
torque limitation [%]	20 200 %
current limiting value [%] adjustable	125 800 %
breakaway voltage [%] adjustable	40 100 %
breakaway time adjustable	0 2 s
number of parameter sets	3
accuracy class according to IEC 61557-12	5 %
certificate of suitability	
CE marking	Yes
UL approval	Yes
UL approval CSA approval	Yes Yes

INVESTIGATION OF THE PROPERTY	M.
HMI-High Feature	Yes Yes Yes Tes Yes
is supported HMI-High Feature	Yes Y
product feature integrated bypass contact system	
number of controlled phases	3
trip class	CLASS 10A / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2
current unbalance limiting value [%]	10 60 %
ground-fault monitoring limiting value [%]	10 95 %
buffering time in the event of power failure	
for main current circuit	100 ms
• for control circuit	100 ms
idle time adjustable	0 255 s
insulation voltage rated value	690 V
degree of pollution	3, acc. to IEC 60947-4-2
impulse voltage rated value	8 kV
blocking voltage of the thyristor maximum	1 800 V
service factor	1.15
surge voltage resistance rated value	8 kV
maximum permissible voltage for safe isolation	
between main and auxiliary circuit	690 V; does not apply for thermistor connection
shock resistance	15 g / 11 ms, from 6 g / 11 ms with potential contact lifting
vibration resistance	15 mm up to 6 Hz; 2 g up to 500 Hz
recovery time after overload trip adjustable	60 1 800 s
utilization category according to IEC 60947-4-2	AC 53a
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	02/11/2019
product function	
ramp-up (soft starting)	Yes
ramp-down (soft stop)	Yes
breakaway pulse	Yes
 adjustable current limitation 	Yes
 creep speed in both directions of rotation 	Yes
 pump ramp down 	Yes
 DC braking 	Yes
 motor heating 	Yes
 slave pointer function 	Yes
trace function	Yes
 intrinsic device protection 	Yes
motor overload protection	Yes; Full motor protection (thermistor motor protection and electronic motor overload protection)
 evaluation of thermistor motor protection 	Yes; Type A PTC or Klixon / Thermoclick
• inside-delta circuit	Yes; Only up to 600 V operating voltage
auto-RESET	Yes
manual RESET	Yes
• remote reset	Yes
 communication function 	Yes
 operating measured value display 	Yes
• event list	Yes
error logbook	Yes
via software parameterizable	Yes
• via software configurable	Yes
screw terminal	Yes
spring-loaded terminal	No
PROFlenergy	Yes; in connection with the PROFINET Standard and PROFINET High- Feature communication modules
• firmware update	Yes
removable terminal for control circuit	Yes
voltage ramp	Yes
• torque control	Yes
combined braking	Yes
analog output	Yes; 4 20 mA (default) / 0 10 V
programmable control inputs/outputs	Yes

 condition monitoring 	Yes
 automatic parameterisation 	Yes Yes Yes
application wizards	Yes / UIGIICUUUII !
 alternative run-down 	Yes
 emergency operation mode 	Yes
reversing operation	Yes
 soft starting at heavy starting conditions 	Yes
Power Electronics	
operational current	
 at 40 °C rated value 	1 280 A
 at 40 °C rated value minimum 	256 A
 at 50 °C rated value 	1 139 A
at 60 °C rated value	1 030 A
operational current at inside-delta circuit	
 at 40 °C rated value 	2 217 A
 at 50 °C rated value 	1 973 A
at 60 °C rated value	1 784 A
operating voltage	
rated value	200 690 V
at inside-delta circuit rated value	200 600 V
relative negative tolerance of the operating voltage	-15 %
relative positive tolerance of the operating voltage	10 %
relative negative tolerance of the operating voltage at inside-delta circuit	-15 %
relative positive tolerance of the operating voltage at inside-delta circuit	10 %
operating power for 3-phase motors	
at 230 V at 40 °C rated value	400 kW
• at 230 V at inside-delta circuit at 40 °C rated value	710 kW
 at 400 V at 40 °C rated value 	710 kW
• at 400 V at inside-delta circuit at 40 °C rated value	1 200 kW
 at 500 V at 40 °C rated value 	900 kW
• at 500 V at inside-delta circuit at 40 °C rated value	1 500 kW
 at 690 V at 40 °C rated value 	1 200 kW
Operating frequency 1 rated value	50 Hz
Operating frequency 2 rated value	60 Hz
relative negative tolerance of the operating frequency	-10 %
relative positive tolerance of the operating frequency	10 %
minimum load [%]	10 %; Relative to set le
power loss [W] for rated value of the current at AC	
 at 40 °C after startup 	384 W
 at 50 °C after startup 	337 W
 at 60 °C after startup 	275 W
power loss [W] at AC at current limitation 350 %	
 at 40 °C during startup 	23 279 W
 at 50 °C during startup 	19 496 W
at 60 °C during startup	16 778 W
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
● at 50 Hz	110 250 V
● at 60 Hz	110 250 V
relative negative tolerance of the control supply voltage at AC at 50 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 50 Hz	10 %
relative negative tolerance of the control supply voltage at AC at 60 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 60 Hz	10 %

control supply voltage frequency	50 60 Hz
relative negative tolerance of the control supply voltage frequency	-10 % dientudong
relative positive tolerance of the control supply voltage frequency	10 %
control supply current in standby mode rated value	100 mA
holding current in bypass operation rated value	210 mA
locked-rotor current at close of bypass contact maximum	1 A
inrush current peak at application of control supply voltage maximum	44 A
duration of inrush current peak at application of control supply voltage	1.7 ms
design of the overvoltage protection	Varistor
design of short-circuit protection for control circuit	4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply
Inputs/ Outputs	
number of digital inputs	4
parameterizable	4
• number of digital outputs	4
number of digital outputs parameterizable	3
 number of digital outputs not parameterizable 	1
digital output version	3 normally-open contacts (NO) / 1 changeover contact (CO)
number of analog outputs	1
switching capacity current of the relay outputs	
• at AC-15 at 250 V rated value	3 A
• at DC-13 at 24 V rated value	1 A
Installation/ mounting/ dimensions	
mounting position	Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°)
fastening method	screw fixing
height	764 mm
width	478 mm
depth	241 mm
required spacing with side-by-side mounting	
forwards	10 mm
backwards	0 mm
• upwards	100 mm
downwards	75 mm
• at the side	5 mm
weight without packaging	61 kg
Connections/ Terminals	
type of electrical connection	
for main current circuit	busbar connection
for control circuit	screw-type terminals
width of connection bar maximum	55 mm
wire length for thermistor connection	
 with conductor cross-section = 0.5 mm² maximum 	50 m
• with conductor cross-section = 1.5 mm² maximum	150 m
with conductor cross-section = 2.5 mm² maximum	250 m
type of connectable conductor cross-sections	0 (70 040 0)
for DIN cable lug for main contacts stranded	2x (50 240 mm²)
for DIN cable lug for main contacts finely stranded	2x (70 240 mm²)
type of connectable conductor cross-sections	Av. (0.5
for control circuit finally atranded with corp and	1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
 for control circuit finely stranded with core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
at AWG cables for control circuit solid	1x (20 12), 2x (20 14)
wire length	
 between soft starter and motor maximum 	800 m
 at the digital inputs at DC maximum 	1 000 m

tightening torque	diantudana
 for main contacts with screw-type terminals 	20 35 N·m 0.8 1.2 N·m
 for auxiliary and control contacts with screw-type 	0.8 1.2 N·m
terminals	
tightening torque [lbf·in]	
for main contacts with screw-type terminals	177 310 lbf·in
 for auxiliary and control contacts with screw-type terminals 	7 10.3 lbf·in
Ambient conditions	
	0.000 Daratina 4000
installation altitude at height above sea level maximum	2 000 m; Derating as of 1000 m, see catalog
ambient temperature	05
during operation	-25 +60 °C; Please observe derating at temperatures of 40 °C or above
during storage and transport	-40 +80 °C
environmental category	10 400 0
during operation according to IEC 60721	3K6 (no ice formation, only occasional condensation), 3C3 (no salt
adding operation absorbing to 120 00721	mist), 3S2 (sand must not get into the devices), 3M6
 during storage according to IEC 60721 	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must
	not get inside the devices), 1M4
during transport according to IEC 60721	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
EMC emitted interference	acc. to IEC 60947-4-2: Class A
Communication/ Protocol	
communication module is supported	
 PROFINET standard 	Yes
 PROFINET high-feature 	Yes
EtherNet/IP	Yes
Modbus RTU	Yes
 Modbus TCP 	Yes
• PROFIBUS	Yes
UL/CSA ratings	
manufacturer's article number	
• of the fuse	
 usable for Standard Faults up to 575/600 V according to UL 	Type: Class J / L, max. 3000 A; Iq = 85 kA
 usable for High Faults up to 575/600 V according to UL 	Type: Class J / L, max. 3000 A; Iq = 100 kA
 usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class J / L, max. 3000 A; Iq = 85 kA
usable for High Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 3000 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
• at 200/208 V at 50 °C rated value	400 hp
 at 220/230 V at 50 °C rated value 	450 hp
 at 460/480 V at 50 °C rated value 	1 000 hp
 at 575/600 V at 50 °C rated value 	1 250 hp
 at 200/208 V at inside-delta circuit at 50 °C rated value 	700 hp
 at 220/230 V at inside-delta circuit at 50 °C rated value 	850 hp
 at 460/480 V at inside-delta circuit at 50 °C rated value 	1 700 hp
at 575/600 V at inside-delta circuit at 50 °C rated value	2 200 hp
contact rating of auxiliary contacts according to UL	R300-B300
Safety related data	
protection class IP on the front according to IEC 60529	IP00
electromagnetic compatibility	acc. to IEC 60947-4-2
ATEX	
certificate of suitability	
• ATEX	Yes
• IECEx	Yes
- 12-0-EX	

type of protection according to ATEX directive 2014/34/EU	II (2)G [Ex eb Gb] [Factor of] [Ex oxb Gb], II (2)D [Ex tb Db] [Ex pxb Db], I (M2) [Ex db Mb]
hardware fault tolerance according to IEC 61508 relating to ATEX	o Juightunning
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.008
PFHD with high demand rate according to EN 62061 relating to ATEX	5E-7 1/h
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 s
Cartificates / approvals	

Certificates/ approvals

General Product Approval

EMC





Confirmation







For use in hazardous locations

Declaration of Conformity

Test Certificates

Marine / Shipping







Type Test Certificates/Test Report





Marine / Shipping

other





Confirmation

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5558-6HA16

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5558-6HA16

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RW5558-6HA16

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5558-6HA16\&lang=en}}$

Characteristic: Tripping characteristics, I2t, Let-through current

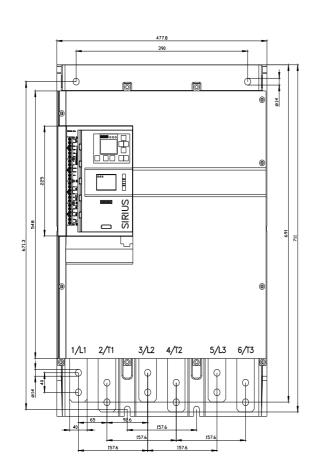
https://support.industry.siemens.com/cs/ww/en/ps/3RW5558-6HA16/char

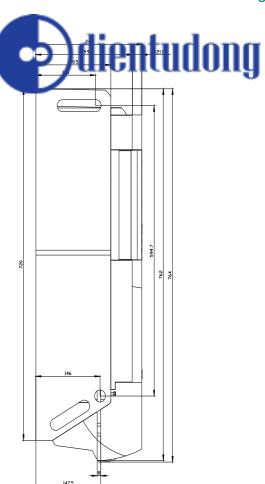
Characteristic: Installation altitude

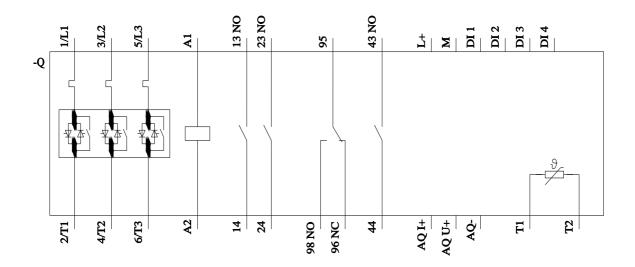
 $\underline{\text{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5558-6HA16\&objecttype=14\&gridview=view1}$

Simulation Tool for Soft Starters (STS)

https://support.industry.siemens.com/cs/ww/en/view/101494917







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